

REMARKS

This Amendment is submitted in response to the Office Action mailed on January 29, 2002. Claims 1, 8, 21 and 23 have been amended, claims 3-5, 15-17 and 22 have been canceled without prejudice or disclaimer and new claims 25-41 have been added. Claims 1, 2, 6-14, 18-21, 23-41 remain in the present application. Applicants' counsel appreciates the courtesy extended by Examiner King during the personal interview conducted on March 6, 2002. Applicants have amended the claims as suggested by Examiner during the personal interview and submit that the claims are allowable over the prior art of record. In view of the foregoing amendments, as well as the following remarks, Applicants respectfully submit that this application is in complete condition for allowance and request reconsideration of the application in this regard.

Claims 4-5 and 21-24 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 1-5, 7-10, 19 and 21-24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Brinegar, U.S. Pat. No. 4,865,357. Claims 1, 3-8, 10-12 and 15-19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Claes et al., U.S. Pat. No. 5,326,138. Claim 21 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Boynton et al., U.S. Pat. No. 3,501,179. Claims 1-2, 7-10 and 18-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shade, U.S. Pat. No. 5,824,727. Claims 3-5 and 11-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shade in view of Claes et al., U.S. Pat. No. 5,415,436. Lastly, claims 2, 9 and 20-24 stand rejected under 35 U.S.C.

§ 103(a) as being unpatentable over Claes et al., U.S. Pat. No. 5,326,138. While Applicants traverse each of the rejections noted above, Applicants have amended the claims to more sharply define the present invention over the prior art of record as discussed during the interview and request that the rejections be withdrawn.

With respect to the § 112 rejections of claims 4-5 and 21-24, Applicants have canceled claims 4 and 5 and amended independent claim 21 to overcome the rejection. Accordingly, the § 112 rejections of claims 21-24 should be withdrawn.

With respect to the rejection of independent claims 1, 8 and 21 as being anticipated by Brinegar, and as discussed during the personal interview, both sides of the Brinegar coupling include an annular corrugation (18) so that neither side of the Brinegar coupling comprises a bell having an inner wall of generally constant diameter as now claimed. Accordingly, Applicants respectfully request that the rejections of claims 1, 8 and 21 as being anticipated by Brinegar be withdrawn.

With respect to the rejection of independent claims 1 and 8 as being anticipated by Claes et al., U.S. Pat. No. 5,326,138, Applicants respectfully submit that Claes et al. '138 fails to disclose, teach or suggest a rigid annular corrugation on one side of the coupling that is adapted to cooperatively engage an annular corrugation on a pipe section end to secure the coupling on the pipe section as claimed by Applicants. Rather, in Claes et al. '138, a groove (44) interacts with a gasket flange (32) of the annular gasket (30) to transfer axial load to the bell of the

coupling. The groove (44) of Claes et al. '138 does not itself engage any corrugation on the pipe section end to secure the coupling on the pipe section end. Accordingly, Applicants respectfully submit that the rejections of independent claims 1 and 8 as being anticipated by Claes et al. '138 should be withdrawn.

With respect to the rejection of claim 21 as being anticipated by Boynton et al., Applicants respectfully submit that Boynton et al. fails to disclose, teach or suggest a bell on the coupling having an inner wall of generally constant diameter as now claimed by Applicants. Rather, in the embodiment of the Boynton et al. coupling referred to by the Examiner, the coupling includes annular corrugations (18) on both sides of the coupling so that neither side of the Boynton et al. coupling comprises a bell having an inner wall of generally constant diameter as now claimed. Accordingly, Applicants respectfully request the rejection of independent claim 21 as being anticipated by Boynton et al. be withdrawn.

With respect to rejection of independent claims 1, 8 and 21 as being obvious in view of Shade, Applicants submit that Shade fails to disclose, teach or suggest an annular corrugation on one side of the sleeve that is "oriented perpendicular to a longitudinal axis of the sleeve" as claimed by Applicants. Moreover, Applicants submit that there is no teaching or suggestion to modify the spiral or thread (20) of Shade to comprise an "annular" corrugation as claimed by Applicants since this would clearly destroy the intended purpose and function of the Shade coupling to "threadably connect" to the pipe section end (28a) (see Column 3, lines 28-50).

The Examiner alleges that Shade suggests the coupler may be used on "non-spiral pipe". To the contrary, Examiner is referred to Column 6, lines 23-28 of Shade which states:

Additionally, while the present invention is particularly adapted for interconnecting adjacent ends of spiral corrugated pipe, it is also contemplated that sleeve 24 may slidably receive other types of corrugated pipes (i.e., non-spiral) or even non-corrugated pipes. (Emphasis added).

Applicants submit that this disclosure in Shade refers only to side (16), i.e., the sleeve (24), of the coupling which is described as "slidably receiving" one end of a pipe section. In each embodiment of the Shade coupling, the side (14) of the coupling opposite the sleeve (24) includes a substantially continuous spiral or thread which is adapted to threadably connect to one end of the adjacent pipe sections. Therefore, Applicants submit that there is no teaching or suggestion to modify the spiral corrugation or thread of Shade to comprise an annular corrugation as claimed by Applicant since this would clearly destroy the intended purpose and function of the Shade coupling. Accordingly, Applicants respectfully request that the rejection of independent claims 1, 8 and 21 as being obvious over Shade be withdrawn.

Lastly, with respect to the rejection of independent claim 21 as being obvious over Claes et al., U.S. Pat. 5,326,138, Applicants submit, as set forth fully above, that Claes et al. '138 fails to disclose, teach or suggest a rigid corrugation on one side of the coupling that is oriented perpendicular to a longitudinal axis of

the sleeve and is adapted to cooperatively engage an annular corrugation on one pipe section end to secure the sleeve to the pipe section. For essentially the same reasons as set forth above with respect to the rejection of independent claims 1 and 8 as being anticipated by Claes et al. '138, Applicants submit that independent claim 21 is patentable over Claes et al. '138 as well.

As claims 2, 6, 7, 9-14, 18-20 and 23 depend from allowable independent claims 1, 8 and 21, and further as each of these claims recites a combination of elements not taught or disclosed by the prior art of record, Applicants respectfully submit that these claims are allowable as well.

Applicants have added new claims 25-41 directed to the embodiment of the coupling illustrated in Fig. 1C of the present application. Applicants respectfully submit that these claims are allowable over the prior art of record as well.


Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Conclusion

In view of the foregoing response including the amendments and remarks, this application is submitted to be in complete condition for allowance and early notice to this affect is earnestly solicited. If there is any issue that remains which may be resolved by telephone conference, the Examiner is invited to contact the undersigned in order to resolve the same and expedite the allowance of this application.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 1, 8, 21 and 23 have been amended, claims 3-5, 15-17 and 22 have been canceled without prejudice or disclaimer and new claims 25-41 have been added as follows:

1. (TWICE AMENDED) A pipe coupling for interconnecting adjacent ends of first and second pipe sections, the end of the first pipe section having an annular corrugation, said coupling comprising:

a generally cylindrical sleeve having first and second sides;

at least one rigid annular corrugation on said first side of said sleeve being oriented perpendicular to a longitudinal axis of said sleeve and adapted to cooperatively engage the annular corrugation on the first pipe section end to secure said sleeve on the first pipe section; and

a bell on said second side of said sleeve having an inner wall of generally constant diameter and being adapted to slidably receive in an axial direction the second pipe section end within said sleeve;

whereby said coupling is adapted to interconnect said adjacent ends of said first and second pipe sections.

3. (CANCELED) Please cancel claim 3 without prejudice or disclaimer.

4. (CANCELED) Please cancel claim 4 without prejudice or disclaimer.

5. (CANCELED) Please cancel claim 5 without prejudice or disclaimer.

8. (TWICE AMENDED) In combination, a pipe coupling and first and second pipe sections, the end of the first pipe section having an annular corrugation, and said coupling comprising:

a generally cylindrical sleeve having first and second sides;

at least one rigid annular corrugation on said first side of said sleeve being oriented perpendicular to a longitudinal axis of said sleeve and adapted to cooperatively engage the annular corrugation on the first pipe section end to secure said sleeve on the first pipe section; and

a bell on said second side of said sleeve having an inner wall of generally constant diameter and being adapted to slidably receive in an axial direction the second pipe section end within said sleeve[,];

whereby said coupling interconnects said adjacent ends of said first and second pipe sections.

15. (CANCELED) Please cancel claim 15 without prejudice or disclaimer.

16. (CANCELED) Please cancel claim 16 without prejudice or disclaimer.

17. (CANCELED) Please cancel claim 17 without prejudice or disclaimer.

21. (TWICE AMENDED) A method of interconnecting adjacent ends of first and second pipe sections, the end of the first pipe section having an annular corrugation, the method comprising the steps of:

providing a substantially flat sheet;

forming a rigid corrugation across the width of said substantially flat sheet;

wrapping said sheet into a cylindrical sleeve including a first side having [an annular] said rigid corrugation oriented perpendicular to a longitudinal axis of said sleeve and a second side having a bell with an inner wall of generally constant diameter; [and]

securing said sleeve about [a] the first pipe section end by cooperatively engaging said rigid corrugation of said sleeve with the annular corrugation of the first pipe section end[.]; and

slidably receiving in an axial direction the second pipe section end within said bell to interconnect the adjacent ends of the first and second pipe sections.

22. (CANCELED) Please cancel claim 22 without prejudice or disclaimer.

23. (AMENDED) The method of claim [22] 21 wherein said sheet is wrapped into said cylindrical sleeve and said first side of said sleeve is secured to said first section of pipe at a first location.

Claims 25-41 have been added.